- Great productivity and biological activity in surface waters

The deep coral banks may be hundreds of thousands of year old, and if destroyed may never be replaced. Data are rapidly accumulating on this relatively recently studied resource, and it is becoming clear that deep-sea coral reefs and other deep hardgrounds are very important slope habitats. There are probably over 110 species of deep-sea corals off the southeastern US, and these plus the sponges, rocks and other fauna combine to form oases of biodiversity in the deep-sea (Fig. 4b). Because of the importance and vulnerability of deep coral habitats, the SAFMC has suggested a huge area in four blocks to be designated as Habitat Areas of Particular Concern. Some bullets about these deep coral habitats follow:

- Coral banks heavily influenced by Gulf Stream dynamics, maybe unrealized small scale variability
- Banks widely scattered but more common on SEUS slope than thought
- Extremely rugged topography
- High species richness, high numbers of species new to science
- Provide shelter, feeding areas, and possibly spawning areas to many species

Based on past experience with evaluation of environmental issues related to energy exploration the list below notes some topics to consider.

- Storms, currents, geology (slumps) in and around areas of interest
- Spills (location & timing), modeling ocean currents
- Sensitive habitats (estuarine nurseries, shelf hardgrounds, deep-sea corals, spawning grounds)
- Endangered/threatened species (1 fish, sea turtles, marine mammals, seabirds)

As noted above the region around The Point has been well studied in the last 10-15 years, and other parts of offshore NC have also continued to be important research area. While our knowledge has improved significantly, there are still (and always will be) important gaps that hinder best management of important biological and economic resources. The list below represents some suggested study topics that are relevant to offshore energy exploration.

- Severe lack of biological data > 200 m, basic surveys needed
- Multibeam mapping of interest/target areas
- Strong need for better habitat descriptions and how they are utilized
- Trophodynamic studies
- Complete trophodynamic study started at "The Point", add other locations
- Interaction of physical oceanography and biology
- larval transport, genetic continuity, dispersal barriers or conduits
- Population structure & connectivity studies
- Marine larvae dynamics
- distributions, seasonality, movements
- Locate ocean spawning areas for important species
- Sociological/economic impact studies